RED FIR RESORT, PWS#1090113
SOURCE WATER ASSESSMENT REPORT

October 23, 2000

State of Idaho
Department of Environmental Quality

Executive Summary

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. This assessment is based on a land use inventory of the designated assessment area and sensitivity factors associated with the watershed characteristics.

This report, *Source Water Assessment for Red Fir Resort (1090113)*, describes the public drinking water system, the zone boundary of water contribution, and the associated potential contaminant sources located within this boundary. This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. **The results should not be used as an absolute measure of risk and they should not be used to undermine public confidence in the water system.**

The Red Fir Resort drinking water system consists of one surface water intake. The drinking water is currently disinfected and filtered, however, at this time Red Fir Resort is not in compliance with the Surface Water Treatment Rule because the filtration system does not meet the minimum requirements of the rule. This has resulted in the system being disapproved by IDEQ.

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

Red Fir Resort's source water protection activities should focus first on meeting the requirements of the Surface Water Treatment Rule. While not in compliance at this time, the system operator has been taking steps towards compliance. No compliance date is projected at this time. Secondary to meeting the requirements of the Surface Water Treatment Rule, Red Fir Resort should attempt to implement practices aimed at reducing the number of potential contaminant sources located within the designated source water area in the future. As the source water area for intakes located on large surface waters is extremely large, most of the designated area not owned by Red Fir Resort. Partnerships with state and local agencies, industry groups and private landowners should be established and are critical to success. Due to the fairly short time associated with the movement of surface waters, source water protection activities should be aimed at short-term management strategies with the development of long-term management strategies to counter any future contamination threats.

A community with a fully developed source water protection program will incorporate many strategies. For assistance in developing protection strategies please contact your regional IDEQ office or the Idaho Rural Water Association.

SOURCE WATER ASSESSMENT FOR RED FIR RESORT

Section 1. Introduction- Basis for Assessment

The following sections contain information necessary to understand how and why this assessment was conducted. **It is important to review this information to understand what the ranking of this source means.** A map showing the delineated source water assessment area, a map showing the entire watershed contributing to the delineated area and the inventory of significant potential sources of contamination identified within the delineated area are attached.

Background

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative susceptibility to contaminants regulated by the Safe Drinking Water Act. This assessment is based on a land use inventory of the delineated assessment area and sensitivity factors associated with the intakes and watershed characteristics.

Level of Accuracy and Purpose of the Assessment

Since there are over 2,900 public water sources in Idaho, there is limited time and resources to accomplish the assessments. All assessments must be completed by May of 2003. An in-depth, site-specific investigation of each significant potential source of contamination is not possible. **Therefore, this assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. The results should <u>not be</u> used as an absolute measure of risk and they should <u>not be</u> used to undermine public confidence in the water system.**

The ultimate goal of the assessment is to provide data to local communities to develop a protection strategy for their drinking water supply system. The Idaho Department of Environmental Quality (IDEQ) recognizes that pollution prevention activities generally require less time and money to implement than treatment of a public water supply system once it has been contaminated. IDEQ encourages communities to balance resource protection with economic growth and development. The decision as to the amount and types of information necessary to develop a source water protection program should be determined by the local community based on its own needs and limitations. Source water protection is one facet of a comprehensive growth plan, and it can complement ongoing local planning efforts.

Section 2. Conducting the Assessment

General Description of the Source Water Quality

Red Fir Resort serves a community of approximately 69 people. The resort intake is located at the mouth of Ellisport Bay on Lake Pend Oreille, just west of Point Hope. (Figure 1). The public drinking water system for Red Fir Resort is comprised of one surface water intake.

The primary issue currently facing Red Fir Resort is that of meeting the requirements of the Surface Water Treatment Rule.

Defining the Zones of Contribution- Delineation

To protect surface water systems from potential contaminants, the EPA required that the entire drainage basin be delineated upstream from the intake to the hydrologic boundary of the drainage basin (U.S. EPA, 1997b). The EPA recognized that an intake on a large water body could have an extensive drainage basin. Therefore, the EPA recommended that large drainage basins be segmented into smaller areas for the purpose of implementing a cost-effective potential contaminant inventory and susceptibility analysis. The delineation process established the physical area around an intake that became the focal point of the assessment. The process included mapping the boundaries of the zone of contribution into a minimum of buffer zones for lakes, which extend 500 ft. from the shoreline around the circumference of the lake. In addition to the buffer zone around the lake itself, creeks and rivers that discharge within the 500-ft. buffer will also have a buffer zone delineated. This buffer zone also extends from where the creek or river flows into the lake extend up tributaries to the remainder of the 25-mile boundary, or the 4-hour streamflow time-of-travel boundary, whichever is greater.

In addition to the source water delineation, IDEQ has included a 24-hour emergency response delineation to facilitate emergency-response activities. If a potential contaminant spills directly into a water body, the drinking water utility needs appropriate notification in order to turn off an intake, or switch to an alternative source. For lakes, this process was not necessary, as the entire water surface area of the lake along with a 500' buffer around the lake will be included in the delineation.
The delineated source water assessment area for Red Fir Resort can best be described as encompassing the entire Lake Pend Oreille watershed and extending into the state of Montana. The actual data used by IDEQ in determining the source water assessment delineation area are available upon request.

Identifying Potential Sources of Contamination

A potential source of contamination is defined as any facility or activity that stores, uses, or produces, as a product or by-product, the contaminants regulated under the Safe Drinking Water Act and has a sufficient likelihood of releasing such contaminants at levels that could pose a concern relative to drinking water sources. The goal of the inventory process is to locate and describe those facilities, land uses, and environmental conditions that are potential sources of surface water contamination. The locations of potential sources of contamination within the delineation areas were obtained by field surveys conducted by IDEQ and from available databases.

The dominant land uses in the area surrounding Red Fir Resort are residential and undeveloped. It is important to understand that a release may never occur from a potential source of contamination provided they are using best management practices. Many potential sources of contamination are regulated at the federal level, state level, or both to reduce the risk of release. Therefore, when a business, facility, or property is identified as a potential contaminant source, this should not be interpreted to mean that this business, facility, or property is in violation of any local, state, or federal environmental law or regulation. What it does mean is that the potential for contamination exists due to the nature of the business, industry, or operation. There are a number of methods that water systems can use to work cooperatively with potential sources of contamination. These involve educational visits and inspections of stored materials. Many owners of such facilities may not even be aware that they are located near a public water supply intake.

Contaminant Source Inventory Process

A two-phased contaminant inventory of the study area was conducted during the spring of 2000. The first phase involved identifying and documenting potential contaminant sources within the Red Fir Resort source water assessment area through the use of computer databases and Geographic Information System (GIS) maps developed by IDEQ. The second or enhanced phase of the contaminant inventory is voluntary. The system operator, Robert Carter, confirmed that no changes were needed to the primary inventory.

A total of 181 potential contaminant sites are located within the delineated source water area (see Table 1). Most of the potential contaminant sources within delineated source water area are located along the shores of Lake Pend Oreille. Significant potential contaminant sources located in the watershed but outside of the buffer zone have also been identified and are shown in Figure 2 and listed in Table 2. Potential contaminant sources located in the delineated source water area for the Red Fir Resort include underground fuel storage tanks, various businesses, National Pollution Discharge Elimination Sites, mines, SARA sites, above ground fuel storage tanks, and enhanced potential contaminant inventory sites identified by other public drinking water systems in the Pend Oreille watershed. (Figure 1). IDEQ has made an effort to identify all of the *possible* sources of contamination within the source water area. IDEQ also realizes that many of the sites identified in the source water areas for large surface water systems are not likely to prove to be threatening to drinking water intakes outside of the immediate vicinity.

Contaminants of concern are primarily related to businesses located on the shores of Lake Pend Oreille. Table 1 summarizes the potential contaminants of concern and information source.

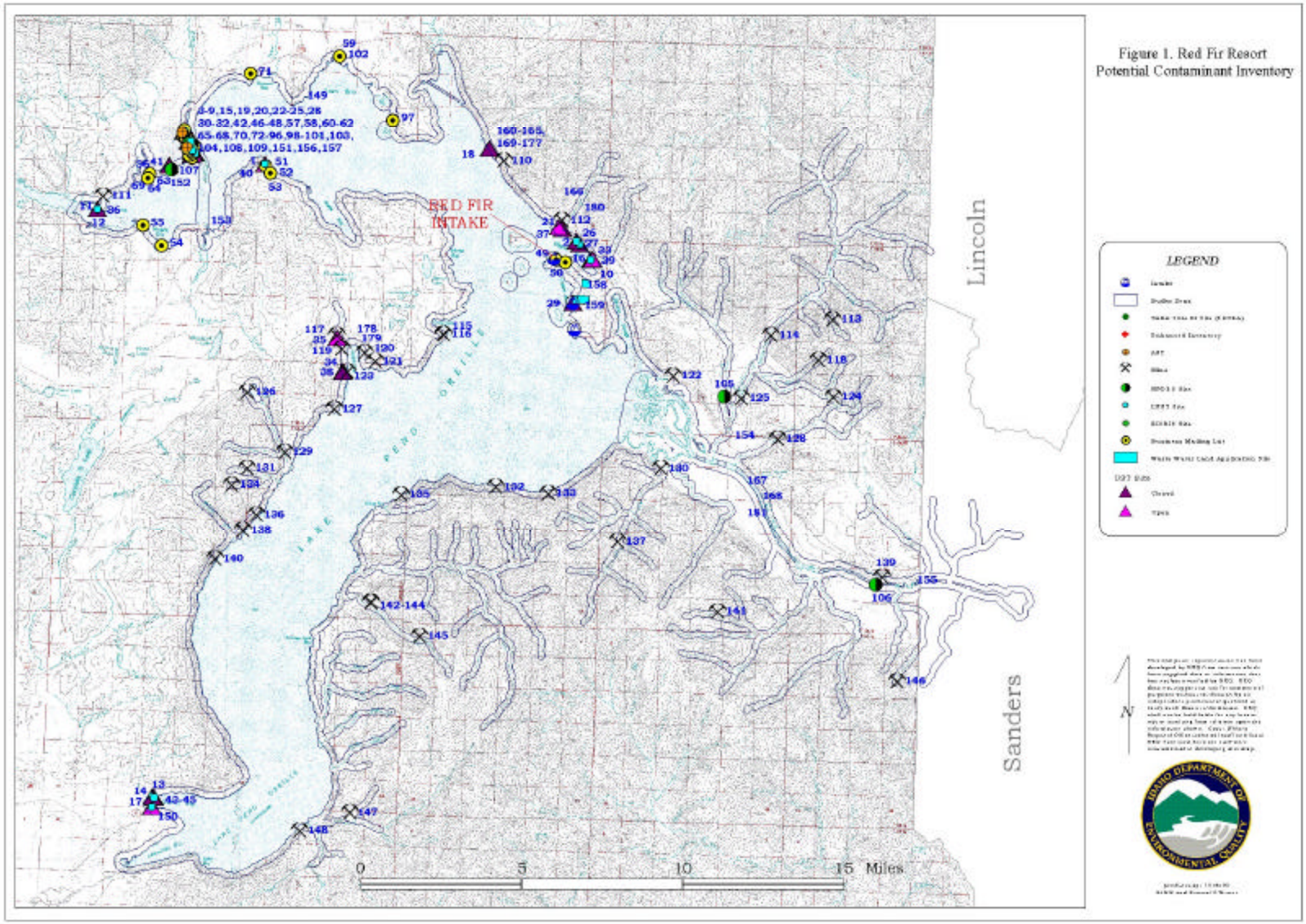
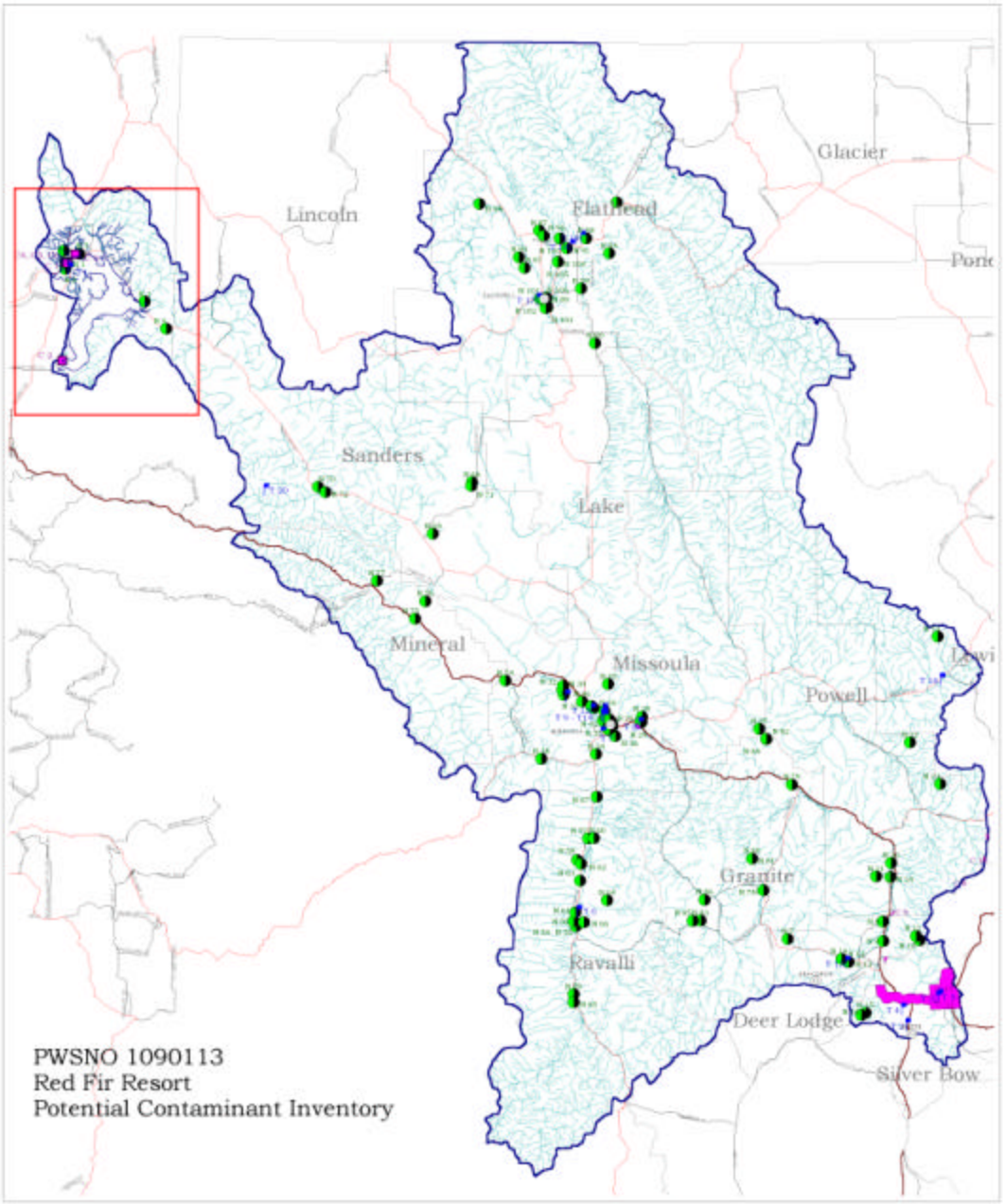


Figure 1. Red Fir Resort
Potential Contaminant Inventory

Figure 2. Red Fir Resort. Location of Significant Potential Contaminant Sources in Watershed



0 25 50 75 100 125 150 175 200 Miles

Clark Fork Watershed

LEGEND

- Watershed Boundary
- Detail Maps
- Cities and Towns
- Rivers and Streams
- Roads
  - Primary road with limited access
  - Primary road
  - Secondary and connecting road
- CERCLIS Site
- NPDES Site
- Toxic Release Inventory

N

Table 1. Red Fir Resort Potential Contaminant Inventory

SITE #	Source Description	Source of Information	Potential Contaminants
1	LUST	Database Search	VOC, SOC
2	LUST	Database Search	VOC, SOC
3	LUST	Database Search	VOC, SOC
4	LUST	Database Search	VOC, SOC
5	LUST	Database Search	VOC, SOC
6	LUST	Database Search	VOC, SOC
7	LUST	Database Search	VOC, SOC
8	LUST	Database Search	VOC, SOC
9	LUST	Database Search	VOC, SOC
10	LUST	Database Search	VOC, SOC
11	LUST	Database Search	VOC, SOC
12	LUST	Database Search	VOC, SOC
13	LUST	Database Search	VOC, SOC
14	LUST	Database Search	VOC, SOC
15	LUST	Database Search	VOC, SOC
16	LUST	Database Search	VOC, SOC
17	LUST	Database Search	VOC, SOC
18	UST	Database Search	VOC, SOC
19	UST	Database Search	VOC, SOC
20	UST	Database Search	VOC, SOC
21	UST	Database Search	VOC, SOC
22	UST	Database Search	VOC, SOC
23	UST	Database Search	VOC, SOC
24	UST	Database Search	VOC, SOC
25	UST	Database Search	VOC, SOC
26	UST	Database Search	VOC, SOC
27	UST	Database Search	VOC, SOC
28	UST	Database Search	VOC, SOC
29	UST	Database Search	VOC, SOC
30	UST	Database Search	VOC, SOC
31	UST	Database Search	VOC, SOC
32	UST	Database Search	VOC, SOC
33	UST	Database Search	VOC, SOC
34	UST	Database Search	VOC, SOC
35	UST	Database Search	VOC, SOC
36	UST	Database Search	VOC, SOC
37	UST	Database Search	VOC, SOC
38	UST	Database Search	VOC, SOC
39	UST	Database Search	VOC, SOC
40	UST	Database Search	VOC, SOC
41	UST	Database Search	VOC, SOC
42	UST	Database Search	VOC, SOC
43	UST	Database Search	VOC, SOC
44	UST	Database Search	VOC, SOC
45	UST	Database Search	VOC, SOC
	UST	Database Search	VOC, SOC

SITE #	Source Description	Source of Information	Potential Contaminants
47	UST	Database Search	VOC, SOC
48	UST	Database Search	VOC, SOC
49	General Contractors	Database Search	VOC
50	Taxidermist	Database Search	VOC
51	Building Contractors	Database Search	VOC, SOC
52	Concrete Contractors	Database Search	VOC
53	Buildings: Pre-cut, Pre-fab	Database Search	VOC, SOC
54	Fish Hatchery	Database Search	Microbial
55	Roofing Contractor	Database Search	VOC
56	Veterinarian	Database Search	SOC
57	Auto Parts- Retail and Supply	Database Search	VOC
58	Service Station- Gas and Oil	Database Search	VOC, SOC
59	Storage- Household and Commercial	Database Search	VOC, SOC
60	Newspaper Publisher	Database Search	SOC, IOC
61	Grading Contractor	Database Search	VOC
62	Hospital	Database Search	VOC, Microbial
63	Veterinarian	Database Search	SOC
64	Cranes- Wholesale	Database Search	VOC
65	Railroad	Database Search	VOC, SOC
66	Oils, Fuel- Wholesale	Database Search	VOC, SOC
67	Hardware- Retail	Database Search	VOC, SOC, IOC
68	Concrete Contractor	Database Search	VOC
69	Marine Contractor	Database Search	VOC, SOC
70	Photographer- Commercial	Database Search	VOC, IOC
71	General Contractor	Database Search	VOC, SOC
72	County, Gov't Transportation Program	Database Search	VOC, IOC
73	Photographer- Portrait	Database Search	VOC, IOC
74	Water Treatment Equip Service and Supplies	Database Search	VOC, SOC
75	Marinas	Database Search	VOC, SOC
76	Tile, Ceramic Contractors/Dealers	Database Search	VOC, IOC
77	Screen Printing	Database Search	VOC, IOC
78	Service Stations- Gas, Oil	Database Search	VOC, SOC
79	Home Builders	Database Search	VOC, SOC
80	Candy and Confectionery- Manufacturer	Database Search	VOC, IOC
81	Photo Finishing- Retail	Database Search	VOC, IOC
82	Printers	Database Search	VOC, IOC
83	Lubricating Service- Mobile	Database Search	VOC, SOC
84	Hardware- Retail	Database Search	VOC, SOC, IOC
85	Storage- Household and Commercial	Database Search	VOC, SOC
86	Building Contractors	Database Search	VOC, SOC
87	Auto Parts and Supplies- Retail	Database Search	VOC
88	Bus Lines	Database Search	VOC, SOC
89	General Contractors	Database Search	VOC, SOC
90	Sign Manufacturer	Database Search	VOC, SOC, IOC
91	Brewers	Database Search	VOC, IOC
92	Cheese Processor	Database Search	VOC, IOC
93	Printers	Database Search	VOC, IOC
94	General Contractor	Database Search	VOC, SOC
95	Photographs- Stock	Database Search	VOC, IOC

SITE #	Source Description	Source of Information	Potential Contaminants
96	Fire Department	Database Search	VOC, SOC
97	Excavating Contractors	Database Search	VOC
98	Newspaper Publishers	Database Search	VOC, IOC
99	Boats- Excursion	Database Search	VOC, SOC
100	Auto Dealers- New Cars	Database Search	VOC, SOC
101	Truck Renting and Leasing	Database Search	VOC, SOC
102	General Contractors	Database Search	VOC, SOC
103	Photographers- Portrait	Database Search	VOC, IOC
104	Storage	Database Search	VOC, SOC
105	NPDES	Database Search	Microbial
106	NPDES	Database Search	Microbial
107	NPDES	Database Search	Microbial
108	RCRIS	Database Search	VOC, SOC
109	RCRIS	Database Search	VOC, SOC
110	Mine- Gold	Database Search	IOC
111	Mine- Sand and Gravel	Database Search	Sediment
112	Mine	Database Search	IOC
113	Mine- Lead	Database Search	IOC
114	Mine- Lead	Database Search	IOC
115	Mine- Lead	Database Search	IOC
116	Mine- Copper	Database Search	IOC
117	Mine- Lead	Database Search	IOC
118	Mine- Lead	Database Search	IOC
119	Mine	Database Search	IOC
120	Mine- Lead	Database Search	IOC
121	Mine	Database Search	IOC
122	Mine- Gold	Database Search	IOC
123	Mine	Database Search	IOC
124	Mine- Lead	Database Search	IOC
125	Mine- Silver	Database Search	IOC
126	Mine- Silver	Database Search	IOC
127	Mine	Database Search	IOC
128	Mine	Database Search	IOC
129	Mine- Lead	Database Search	IOC
130	Mine- Lead	Database Search	IOC
131	Mine- Silver	Database Search	IOC
132	Mine-Gold	Database Search	IOC
133	Mine- Copper	Database Search	IOC
134	Mine- Silver	Database Search	IOC
135	Mine	Database Search	IOC
136	Mine	Database Search	IOC
137	Mine	Database Search	IOC
138	Mine	Database Search	IOC
139	Mine- Copper	Database Search	IOC
140	Mine	Database Search	IOC
141	Mine- Clay	Database Search	Sediment
142	Mine- Zinc	Database Search	IOC
143	Mine- Lead	Database Search	IOC

SITE #	Source Description	Source of Information	Potential Contaminants
144	Mine	Database Search	IOC
145	Mine	Database Search	IOC
146	Mine- Copper	Database Search	IOC
147	Mine	Database Search	IOC
148	Mine- Limestone	Database Search	Sediment
149	SARA	Database Search	VOC, SOC
150	SARA	Database Search	VOC, SOC
151	SARA	Database Search	VOC, SOC, IOC
152	SARA	Database Search	VOC, SOC
153	SARA	Database Search	VOC, SOC
154	SARA	Database Search	VOC, SOC
155	SARA	Database Search	VOC, SOC
156	AST	Database Search	VOC, SOC
157	AST	Database Search	VOC, SOC
158	WLAP	Database Search	Microbial
159	WLAP	Database Search	Microbial
160	Septic Drainfield	Enhanced Inventory	Microbial
161	Main Rail Line	Enhanced Inventory	VOC, SOC
162	Hwy 200	Enhanced Inventory	VOC, SOC
163	Septic Drainfield	Enhanced Inventory	Microbial
164	Main Rail Line	Enhanced Inventory	VOC, SOC
165	Hwy 200	Enhanced Inventory	VOC, SOC
166	Forest Road	Enhanced Inventory	VOC, SOC
167	RV Park	Enhanced Inventory	VOC, SOC, Microbial
168	Clark Fork River	Enhanced Inventory	Microbial
169	Septic Tank	Enhanced Inventory	Microbial
170	Septic Tank	Enhanced Inventory	Microbial
171	Old Wellhead	Enhanced Inventory	Microbial
172	Septic Tank	Enhanced Inventory	Microbial
173	Septic Tank	Enhanced Inventory	Microbial
174	Gray Water Tank	Enhanced Inventory	Microbial
175	Septic Tank	Enhanced Inventory	Microbial
176	AST	Enhanced Inventory	VOC, SOC
177	Public Restrooms	Enhanced Inventory	Microbial
178	Vault Toilet	Enhanced Inventory	Microbial
179	Vault Toilet	Enhanced Inventory	Microbial
180	Landslide	Enhanced Inventory	Sediment
181	Lagoon	Enhanced Inventory	Microbial

IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

Table 2. Significant Potential Contaminants in Watershed

Table 2a. CERCLA Sites

SITE #	Source Description	Source of Information	Potential Contaminants
C 1	Wood Treatment	Database Search	IOC, SOC
C 2	Government	Database Search	VOC, SOC
C 3	Mining Sediment	Database Search	IOC, Turbidity
C 4	Industrial	Database Search	VOC, SOC
C 5	Industrial	Database Search	VOC, SOC
C 6	Wood Treatment	Database Search	IOC, SOC
C 7	Mine	Database Search	IOC
C 8	Mine	Database Search	IOC
C 9	Mine	Database Search	IOC
C 10	Mine	Database Search	IOC
C 11	Mining Sediment	Database Search	IOC, Turbidity
C 12	Wood Treatment	Database Search	IOC, SOC
C 13	Mine	Database Search	IOC

Table 2b. NPDES Sites

SITE #	Source Description	Source of Information	Potential Contaminants
N 1	Stormwater	Database Search	IOC, VOC, SOC
N 2	Stormwater	Database Search	IOC, VOC, SOC
N 3	Aquaculture	Database Search	Microbial
N 4	Aquaculture	Database Search	Microbial
N 5	Sewage Lagoon	Database Search	Microbial
N 6	Wastewater Treatment Plant	Database Search	IOC, VOC, SOC, Microbial
N 7	Placer Mine Settling Ponds	Database Search	IOC, VOC, SOC, Microbial
N 8	Wastewater Treatment Plant	Database Search	IOC, VOC, SOC, Microbial
N 9	Facultative Sewage Lagoon	Database Search	Microbial
N 10	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC
N 11	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC
N 12	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 13	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 14	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 15	Mining Area Drainage	Database Search	IOC
N 16	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC
N 17	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC
N 18	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC
N 19	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC
N 20	Wastewater Treatment Plant	Database Search	IOC, VOC, SOC, Microbial
N 21	Feedlots	Database Search	Microbial
N 22	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC
N 23	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC
N 24	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 25	Total Discharge To River	Database Search	IOC, VOC, SOC
N 26	Non-Contact Heat Exchanger	Database Search	IOC, VOC, SOC
N 27	Settling Pond Effluent	Database Search	IOC, SOC
N 28	Trickling Filter Effluent	Database Search	IOC, SOC

SITE #	Source Description	Source of Information	Potential Contaminants
N 29	Activated Sludge Effluent	Database Search	IOC, SOC
N 30	Stone Sediment	Database Search	Turbidity
N 31	Stone Sediment	Database Search	Turbidity
N 32	Stone Sediment	Database Search	Turbidity
N 33	Uncontaminated Cooling Water	Database Search	IOC, VOC, SOC
N 34	Wastewater Treatment Plant	Database Search	IOC, VOC, SOC, Microbial
N 35	Wastewater Treatment Plant	Database Search	IOC, VOC, SOC, Microbial
N 36	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC
N 37	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC
N 38	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC
N 39	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 40	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 41	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 42	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 43	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 44	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 45	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 46	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 47	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 48	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 49	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 50	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 51	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 52	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 53	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 54	Boiler Blowdown and Cooling Water	Database Search	IOC, VOC, SOC
N 55	Noncontact Cooling Water	Database Search	IOC, VOC, SOC
N 56	Wastewater Treatment Plant	Database Search	IOC, VOC, SOC, Microbial
N 57	Wastewater Treatment Plant	Database Search	IOC, VOC, SOC, Microbial
N 58	Feedlots	Database Search	Microbial
N 59	Facultative Sewage Lagoon	Database Search	Microbial
N 60	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 61	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 62	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 63	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 64	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 65	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 66	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 67	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 68	Wastewater Treatment Plant	Database Search	IOC, VOC, SOC, Microbial
N 69	Lagoon, Without Significant Industry	Database Search	Microbial
N 70	Lagoon, Without Significant Industry	Database Search	Microbial
N 71	Lagoon, Without Significant Industry	Database Search	Microbial
N 72	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 73	Talc Mine	Database Search	Turbidity
N 74	Wastewater Treatment Plant	Database Search	IOC, VOC, SOC, Microbial
N 75	Wastewater Treatment Plant	Database Search	IOC, VOC, SOC, Microbial
N 76	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC

SITE #	Source Description	Source of Information	Potential Contaminants
N 77	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 78	Wastewater Treatment Plant	Database Search	IOC, VOC, SOC, Microbial
N 79	Facultative Sewage Lagoon	Database Search	Microbial
N 80	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC
N 81	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC
N 82	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC
N 83	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC
N 84	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC
N 85	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC
N 86	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC
N 87	Railroad	Database Search	VOC, SOC
N 88	Wastewater Treatment Plant	Database Search	IOC, VOC, SOC, Microbial
N 89	Noncontact Cooling Water	Database Search	IOC, VOC, SOC
N 90	Wastewater Treatment Plant	Database Search	IOC, VOC, SOC, Microbial
N 91	Wastewater Treatment Plant	Database Search	IOC, VOC, SOC, Microbial
N 92	Water Treatment Plant	Database Search	IOC, VOC, SOC, Microbial
N 93	Wastewater Treatment Plant	Database Search	IOC, VOC, SOC, Microbial
N 94	Wastewater Treatment Plant	Database Search	IOC, VOC, SOC, Microbial
N 95	Water Treatment Plant	Database Search	IOC, VOC, SOC, Microbial
N 96	Wastewater Treatment Plant	Database Search	IOC, VOC, SOC, Microbial
N 97	Feedlots	Database Search	Microbial
N 98	Facultative Sewage Lagoon	Database Search	Microbial
N 99	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC
N 100	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 101	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 102	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 103	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 104	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 105	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 106	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 107	Storm Water - Industrial	Database Search	IOC, VOC, SOC

Table 2c. Toxic Release Inventory Sites

SITE #	Source Description	Source of Information	Potential Contaminants
T1	Industrial	Database Search	IOC, VOC, SOC
T 2	Industrial	Database Search	IOC, VOC, SOC
T 3	Concrete and Fuel	Database Search	VOC, IOC, SOC
T 4	Silicon	Database Search	VOC, IOC, SOC
T 5	Industrial	Database Search	IOC, VOC, SOC
T 6	Chemical	Database Search	IOC, VOC, SOC
T 7	Industrial	Database Search	IOC, VOC, SOC
T 8	Textile	Database Search	VOC
T 9	Industrial	Database Search	IOC, VOC, SOC
T 10	Chemical	Database Search	IOC, VOC, SOC
T 11	Wood Products	Database Search	IOC, SOC
T 12	Air Base	Database Search	VOC, SOC
T 13	Stone	Database Search	IOC, Turbidity

SITE #	Source Description	Source of Information	Potential Contaminants
T 14	Industrial	Database Search	IOC, VOC, SOC
T 15	Industrial	Database Search	IOC, VOC, SOC
T 16	Wood Products	Database Search	IOC, SOC
T 17	Wood Products	Database Search	IOC, SOC
T 18	Wood Products	Database Search	IOC, SOC
T 19	Aluminum	Database Search	IOC, VOC, SOC
T 20	Mining	Database Search	IOC

Section 3. Susceptibility Analysis

Significant potential sources of contamination were ranked as high, moderate, or low risk according to the following considerations: hydrologic characteristics, physical integrity and construction of the intake, land use characteristics, and potentially significant contaminant sources. The susceptibility rankings are specific to a particular potential contaminant or category of contaminants. Therefore, a high susceptibility rating relative to one potential contaminant does not mean that the water system is at the same risk for all other potential contaminants. The relative ranking that is derived for each intake is a qualitative, screening-level step that, in many cases, uses generalized assumptions and best professional judgement. The following summaries describe the rationale for the susceptibility ranking.

Intake Construction

The construction of the Red Fir Resort public water system intake directly affects the ability of the intake to protect the source from contaminants. The Red Fir Resort drinking water system consists of one intake that produces surface water for domestic use. Water production is monitored and managed by the system operator. The intake system construction score was moderate, reflecting the fact that the intake is constructed in a way that provides for protection against contamination, but does not have the added benefit of being located in an infiltration gallery. The Red Fir Resort drinking water system intake is located at the mouth of Ellisport Bay on Lake Pend Oreille, just west of Point Hope.

Potential Contaminant Source and Land Use

The drinking water intake rated in the moderate category for the inorganic chemical class, volatile organic chemicals, and synthetic organic chemicals. This is due to the presence of a large number of contaminants from each of these categories within the buffer zone. All but three of these contaminants are located more than a mile away from the intake. In terms of the total susceptibility score, it can be seen from Table 3 that the intake showed a moderate susceptibility for microbial contamination, which is generally related to storm water runoff and agricultural grazing impacts, but may also be related to the presence of a high density of individual septic systems near the intake.

Table 3. Summary of Red Fir Resort Susceptibility Evaluation

	Contaminant Inventory				System Construction	**Final Susceptibility Ranking**			
Intake	IOC	VOC	SOC	Microbials		IOC	VOC	SOC	Microbials
1	M	M	M	M	M	M	M	M	M

H = High Susceptibility, M = Moderate Susceptibility, Low Susceptibility
IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical
H* - Indicates source automatically scored as high susceptibility due to presence of either a VOC, SOC or an IOC above the Maximum Contaminant Level in the finished drinking water.

Susceptibility Summary

The Red Fir Resort drinking water system is currently not threatened by significant potential contaminant sources, although there is a large number of potential contaminant sources within the designated source water area.

Section 4. Options for Source Water Protection

The susceptibility assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what the susceptibility ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses that require education and surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

An effective source water protection program is tailored to the particular local source water protection area. A community with a fully developed source water protection program will incorporate many strategies. Red Fir Resort should first complete the process of complying with the Surface Water Treatment Rule by adding an approved filtration component to their drinking water system. They should then focus on implementation of practices aimed at preventing potential sources of contamination from being located in the source water area in the future. Because the majority of the delineated area is not owned by Red Fir Resort, partnerships with state and local agencies, industry groups and private landowners should be established and are critical to success. Due to the relatively short time involved with the movement of surface water, source water protection activities should be aimed at short-term management strategies with an emphasis on dealing with long-term future impacts from these same sources.

Assistance

Public water suppliers and others may call the following IDEQ offices with questions about this assessment and to request assistance with developing and implementing a local protection plan. In addition, draft protection plans may be submitted to the IDEQ office for preliminary review and comments.

Coeur d'Alene Regional IDEQ Office	(208) 769-1422
State IDEQ Office	(208) 373-0502

Website: http://www.deq.state.id.us

References Cited

U.S. Environmental Protection Agency (EPA), 1999. Preparing Your Drinking Water Consumer Confidence Report, Guidance for Water Suppliers. Appendix A- Regulated Contaminants.

Attachment A

Red Fir Resort
Susceptibility Analysis
Worksheet

The final scores for the susceptibility analysis were determined from the addition of the Potential Contaminant Source/Land Use Score and Source Construction Score.

Final Susceptibility Scoring:

0 - 7 Low Susceptibility

8 - 15 Moderate Susceptibility

> 16 High Susceptibility

Surface Water Susceptibility Report Public Water System Name : RED FIR RESORT Intake : LK PEND OREILLE

Public Water System Number: 1090113 10/23/00 11:34:12 AM

1. System Construction		SCORE
Intake structure properly constructed	YES	0
Infiltration gallery or well under the direct influence of Surface Water	NO	2
	Total System Construction Score	2

2. Potential Contaminant Source / Land Use		IOC Score	VOC Score	SOC Score	Microbial Score
Predominant land use type (land use or cover)	BASALT FLOW, UNDEVELOPED, OTHER	0	0	0	0
Farm chemical use high	NO	0	0	0	
Significant contaminant sources *	NO				
Sources of class II or III contaminants or microbials	present within the small stream segment of	4	4	4	4
Agricultural lands within 500 feet	NO	0	0	0	0
Three or more contaminant sources	YES	1	1	1	1
Sources of turbidity in the watershed	NO	0	0	0	0
	Total Potential Contaminant Source / Land Use Score	9	9	9	9
3. Final Susceptibility Source Score		11	11	11	11
4. Final Source Ranking		Moderate	Moderate	Moderate	Moderate

* Special consideration due to significant contaminant sources
The source water has no special susceptibility concerns

POTENTIAL CONTAMINANT INVENTORY
LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as ASuperfund@ is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.